Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte CARL J. BILGRIEN, SHAWN K. MEALEY,
and MICHAEL W. SKINNER

_____

Appeal No. 1999-2201
Application No. 08/704,063

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ON BRIEF

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Before KIMLIN, WALTZ, and KRATZ, Administrative Patent Judges.

WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 17-22, 24-27, 30-32 and 35-37. Claims 2-8, 11-13 and 33-34, the only other claims pending in this application, stand allowed by the examiner (see the Final Rejection dated Aug. 25, 1998, Paper No. 10, page 2, and the Brief, page 2). We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a method of making a curable silicone release coating composition

comprising mixing an organopolysiloxane containing certain specified higher alkenyl groups with an organohydrogensilicon compound, a platinum group metal-containing catalyst, a silylated acetylenic compound, and optionally a diluent (Brief, page 2).

Appellants state that "[n]o grouping of the claims is necessary for the purposes of this appeal." Brief, page 3. We construe this statement as meaning that the claims stand or fall together (see the Answer, page 2, ¶7). Accordingly, we select independent claim 35 from the grouping of claims for each rejection and decide this appeal as to these grounds of rejection on the basis of this claim alone. See 37 CFR § 1.192(c)(7)(1997). A copy of this claim is attached as an Appendix to this decision.

The examiner has relied upon the following references as evidence of obviousness:

Lee et al. (Lee)	4,032,502	June 28, 1977
Keryk et al. (Keryk)	4,609,574	Sep. 02, 1986
Isobe et al. (Isobe)	4,726,964	Feb. 23, 1988
Kurita et al. (Kurita)	4,839,452	Jun. 13, 1989
Hara et al. (JP '786) (published Japanese Kokoku Patent)[1]	1-12786	Mar. 02, 1989

Hara et al. (Hara), "Retardation effect by acetylene derivatives on hydrosilylation. Estimation of the retarder's capability by

[1]We rely on and cite from a full English translation of this document, previously made of record.

differential thermal analysis method," pp. 541-546, *Nippon Kagaku Kaishi*, Vol. 5, 1990 (abstract from Chemical Abstracts relied upon by the examiner, dated 1990).[2]

The claims on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kurita and Isobe in view of Hara, JP '786, Lee and Keryk (Answer, page 3). The claims on appeal also stand rejected under 35 U.S.C. § 103(a) as unpatentable over Keryk in view of JP '786 and Lee (Answer, page 5). We *affirm* both of the rejections on appeal essentially for the reasons expressed in the Answer and the reasons set forth below.

OPINION

A. The Rejection over Kurita, Isobe, JP '786, Lee, Hara and Keryk

The examiner finds that Kurita discloses a method of making a silicone release coating and a process of coating and heat curing where the coating comprises the same components (A), (B), (C) and (D) as recited in claim 35 on appeal, although component (A) is only generically disclosed as an alkenyl-group terminated polyorganosiloxane (Answer, page 3).[3] The examiner further finds

[2]See the Answer, page 3, where the examiner states the rejection includes "the Hara et al abstract."

[3]A discussion of Isobe is unnecessary to this decision as this reference is merely cumulative to Kurita. See the Answer, page 4.

that Kurita suggests that the alkenyl group in this polyorganosiloxane may be groups such as 1-hexenyl (*id.*, citing col. 3, l. 28).

The examiner applies Keryk for the disclosure of similar silicone release coatings to those of Kurita with the teaching of advantages for the use of higher alkenyl groups in olefinic polyorganosiloxanes corresponding to component (A)(Answer, page 4). From these findings, the examiner concludes that it would have been obvious to employ higher alkenyl radicals as taught by Keryk for the alkenyl groups of the polyorganosiloxane of Kurita for the attendant advantages, i.e., a faster and more complete hydrosilylation reaction with improved releasability (Answer, page 5). We agree.[4]

Appellants argue that Kurita requires an acetylenic bond attached to the silicon atom for component (D) whereas none of the claimed compounds (D) used as inhibitors contain such a bond.

[4]The examiner applies Hara, JP '786 and Lee to show the conventional use in this art of various species of silylated acetylenic hydrosilylation inhibitors, as recited in claim 36 (Answer, page 5). Since we base our decision on claim 35, as discussed above, a discussion of these references is unnecessary to our decision regarding this rejection. Additionally, we note that appellants have admitted that various silylated acetylenic hydrosilylation inhibitors are known in the art, citing Lee and JP '786 among other references (specification, page 2, last line, to page 5, line 28).

Appellants argue that nowhere in Kurita is there any suggestion or contemplation of the silylated acetylenic compounds of this invention (Brief, page 4).

These arguments are not persuasive. Although Kurita does disclose that component (D) contains at least one Si-C≡CH bond (see col. 3, ll. 3-19, and col. 4, l. 62-col. 5, l. 5), Kurita also discloses a formula for inhibitor compounds within the scope of component (D) as recited in claim 35 on appeal (see the Answer, page 3, citing Kurita, col. 5, ll. 21-39, and col. 6, ll. 1-12). It is clear from the entire context of the disclosure and the specific examples of component (D) disclosed by Kurita that the silicon may be bonded to oxygen but the inhibitor contains an acetylenic bond (see the formula at col. 3, ll. 5-8, and the formulas at col. 6 through col. 8).

Appellants admit that "Keryk et al. discloses higher alkenyl functional organopolysiloxanes" but does not disclose or suggest the particular inhibitors claimed (Brief, page 6). This argument is not well taken since, in this rejection, Keryk has been applied for the disclosure of a similar release coating to that of Kurita with the teaching that siloxane polymers (component (A)) containing higher alkenyl radicals "react faster and more completely than the vinyl containing polymers in the metal

catalyzed cure reaction with SiH functional polymers." See col. 3, ll. 39-43.

For the foregoing reasons and those stated in the Answer, we determine that the examiner has established a *prima facie* case of obviousness for the subject matter of the claims on appeal in view of the reference evidence.

B. The Rejection over Keryk, JP '786 and Lee

As discussed above, the examiner finds that Keryk teaches the advantages of higher alkenyl substituents in the polyorganosiloxane polymer used as component (A). In this rejection, the examiner also finds that Keryk discloses components (B) and (C) as recited in claim 35 on appeal (Answer, page 5). The examiner further finds that Keryk discloses hydrosilylation inhibitors as component (D), with the general teaching that one class of these inhibitors is the reaction product of a siloxane having silicon-bonded hydrogen atoms, a platinum catalyst, and an acetylenic alcohol (*id.*, citing col. 6, ll. 35-37). Accordingly, the examiner applies JP '786 and Lee for the showing of known silylated acetylenic hydrosilylation inhibitors with their attendant advantages (see the Answer, page

6).[5] From these findings, the examiner concludes that it would have been obvious to use the inhibitors taught by JP '786 and Lee as the inhibitor of Keryk in order to insure non-reactivity under heating conditions and to impart a prolonged pot life and improved releasability (*id.*). We agree.

Appellants again admit that Keryk teaches higher alkenyl substituted polyorganosiloxanes but argue that this reference does not disclose or suggest the particular inhibitors as claimed (Brief, page 7). This argument is not persuasive since Keryk does suggest the particular class of inhibitors used (see col. 6, ll. 15-48), while JP '786 and Lee teach the advantages of the particular inhibitors as claimed. The test for obviousness is what the *combined* teachings of the references would have suggested to one of ordinary skill in the art. *See In re Keller,* 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

Appellants argue that JP '786 and Lee do not disclose or suggest higher alkenyl functional siloxanes as claimed (Brief, page 8). This argument is not well taken for reasons given above, namely that the references as a whole must be considered in any obviousness analysis. *See Keller, supra.*

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[5]As previously discussed, appellants admit that silylated acetylenic inhibitors are known in this art, citing Lee and JP '786 (specification, page 2, l. 26-page 5, l. 28).

For the foregoing reasons and those stated in the Answer, we determine that the examiner has established a *prima facie* case of obviousness in view of the reference evidence.

C. The Comparative Data

In response to both rejections discussed above, appellants submit that the comparative data in the specification "shows the advantages of the instant compositions as claimed" in comparison to the compositions of Kurita (Brief, pages 4-5) and Keryk (Brief, pages 6-7). Appellants argue that Examples 43-46 and 48-52 on pages 37-39 of the specification show advantageous results over the compositions of Kurita while Examples 1 and 49 on pages 33 and 38-39, respectively, of the specification show advantageous results over the compositions of Keryk (*id.*).

Once *prima facie* obviousness has been established and appellants have submitted evidence of unexpected results, we must reevaluate the evidence based on the totality of the record and determine whether the preponderance of evidence weighs most heavily for or against obviousness. *See In re Oetiker,* 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Having reviewed the showing of comparative data in the specification, we agree with the examiner that appellants have not met their burden of showing unexpected results. As noted by

the examiner (Answer, pages 7-8), the amount of inhibitor used in every example varies and therefore there is no way to determine if the different results are due to the type or amount of the inhibitor. *See In re Dunn*, 349 F.2d 433, 439, 146 USPQ 479, 483 (CCPA 1965).

As also noted by the examiner (Answer, page 10), to be effective a comparative showing must be made with the closest prior art. *See In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 71 (CCPA 1979). The comparative inhibitor in all of appellants' data is 3,5-dimethyl-1-hexyn-3-ol, and appellants have not established that this acetylenic alcohol is the closest prior art representative of both Kurita and Keryk.

Additionally, any comparative showing must be commensurate in scope with the claimed subject matter. *See In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). Appellants have not shown that the examples, which are limited to specific compounds in specific amounts, are commensurate in scope with the claims which are not so limited (see the Answer, page 8).

Finally, expected beneficial results are evidence of obviousness just as unexpected beneficial results are evidence of unobviousness. *See In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975). Keryk teaches that beneficial results would have

been expected when employing higher alkenyl groups in component (A) over the conventional use of vinyl groups (see col. 3, ll. 38-61). This is the same result found by appellants (see the specification, page 42, ll. 15-22).

For the foregoing reasons, based on the totality of the record, giving due consideration of appellants' evidence and arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness. Accordingly, we affirm both of the examiner's rejections.

D. Summary

The rejection of claims 17-22, 24-27, 30-32 and 35-37 under 35 U.S.C. § 103(a) over Kurita and Isobe in view of Hara, JP '786, Lee and Keryk is affirmed. The rejection of claims 17-22, 24-27, 30-32 and 35-37 under 35 U.S.C. § 103(a) over Keryk in view of JP '786 and Lee is also affirmed.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Edward C. Kimlin Administrative Patent Judge	)
Thomas A. Waltz Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
Peter F. Kratz Administrative Patent Judge	)

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APPENDIX

35. A method of making a curable silicone release coating composition comprising:

(I) mixing;

(A') an organopolysiloxane compound having its formula selected from the group consisting of:

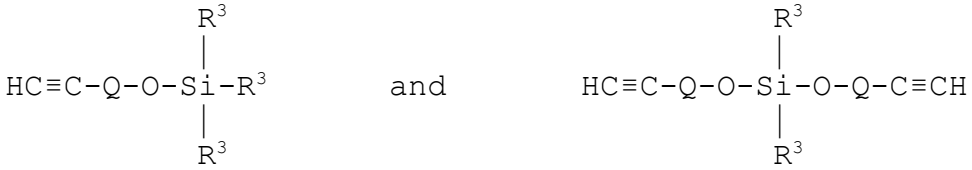
(i) $R^2_3SiO(R_2SiO)_x(RR^2SiO)_ySiR^2_3$,
(ii) $R^2_3SiO(R_2SiO)_xSiR^2_3$, and
(iii) $R^2_3SiO(RR^2SiO)_ySiR^2_3$,

wherein R is independently selected from monovalent hydrocarbon or halohydrocarbon radicals free of aliphatic unsaturation and having from 1 to 20 carbon atoms, R^2 is independently selected from the group consisting of methyl and an alkenyl group selected from the group consisting of 5-hexenyl, 6-heptenyl, 7-octenyl, 8-nonenyl, 9-decenyl, 10-undecenyl, 4,7-octadienyl, 5,8-nonadienyl, 5,9-decadienyl, 6,11-dodecadienyl, and 4,8-nonadienyl, x has a value of from greater than zero to 7000, and y has a value of from greater than zero to 350 with the proviso that there is at least two alkenyl groups as defined above per compound;

(B') an organohydrogensilicon compound;

(C') a platinum group metal-containing catalyst;

(D') a silylated acetylenic compound having its formula selected from the group consisting of:



and

wherein R^3 is independently a monovalent hydrocarbon or halohydrocarbon radical having from 1 to 20 carbon atoms and free of aliphatic unsaturation, and Q is a divalent hydrocarbon radical having at least 3 carbon atoms; and optionally (E) a diluent.